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ABSTRACT

A study was made of the relationship between the language dominance of a child and the effects of viewing a bilingual television program called Carrascolendas. A previous study showed that the program did have an effect on average knowledge gains among viewers. In order to ascertain whether these gains were in some way related to the language dominance of the child, an index was constructed to determine the child's language dominance--Spanish, English, or bilingual. When this index was correlated with gains made as a result of viewing the program, no significant evidence was found that the effects of viewing Carrascolendas were related to, or dependent upon, the child's language dominance. (JY)

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ON THE RELATIONSHIP OF LANGUAGE DOMINANCE AND THE EFFECTS OF VIEWING CARRASCOLENDAS

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The main focus of this report is to answer the question: What is the relationship between the language dominance of a child and the effects of viewing CARRASCOLENDAS? In the report of the second year evaluation of the television series (Williams, McRae, and Van Wart, 1372) the overall effects of viewing the program were gauged in terms of a pre and post series testing technique where the test items reflected a sampling of behavioral objectives of the program. The tests were administered to three groups: (1) children who viewed the program and who engaged in supplementary class activities, (2) children who viewed the program but had no supplementary class activities, and (3) a group of comparable children who did not view the program, nor have the activities. Overall gains--that is, differences between post and pre test scores--were indexed in two ways. One score reflected frequencies of items that were correct or partly correct as compared with items which were not correct. A second scoring procedure differentiated responses by means of a four step scale ranging from totally incorrect ("1"), partly correct ("2"), totally correct but prompted ("3"), and altogether perfect ("4"). Analyses of both frequency of correct items and scale measures indicated that the viewer groups generally made greater gains on test items than did the nonviewer groups. These gains were greater in English test items than they were for the Spanish ones. Further, particularly on English items, viewers who had supplementary activities experienced greater gains than viewers who did not have activities, although both groups were in most cases greater than groups of children who were nonviewers. In more general terms, these results were interpreted as indicating that CARRASCOLENDAS did have an effect upon average knowledge gains and that supplementary activities somewhat facilitated these gains. Further details on these results and analyses of subtests may be found in the main report (Williams, et al., 1972).

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A practical question, and one not researched in the main report, was whether these gains were related to, or affected in some way by, the language dominance of the children in the experiment. In answering this question, it should be recalled at the outset that the children were, as much as possible, randomly assigned to the three different groups in the experiment. Thus it was not likely that any differences among the control and viewer groups would be due to one group having more children dominant in one language or another. As was anticipated in the design of the experiment, the children in the three groups are comparable with the exception of the treatment--viz., viewing, viewing plus activities, not viewing.

We, of course, must have some index in order to consider language dominance. One such index was the teacher's rating of a child as either being English dominant, Spanish dominant, or bilingual. Another index of language dominance was based upon fieldworkers' ratings of the children's fluency in responding to questions which required continuous responses. As described in more detail in the main report, some questions were meant to elicit a continuous response from the child, that is, the question could not be answered with one word or a short phrase. On these, the fieldworker scored the child on a one-to-four fluency scale.[1]

If these fluency ratings had a useful degree of validity, we would expect that they would agree to a reasonable degree with the teachers' division of the children into different language dominant groups. Table 1 presents the summary comparison on this point. It is clear from this summary, that children who were classified as being Spanish dominant had a higher average fluency score in Spanish items (2.00) as compared to their fluency scores when responding to English items (1.45). As would be expected, the reverse is true for the children who are rated as English dominant by the teachers. Their fluency score on English items (2.26) exceeds on the average their fluency score on Spanish items (0.72). It would be anticipated that children who classified as bilingual could be more nearly equal in terms of average fluency in both languages, and the results in Table 1 point to this. The conclusion here, then, is that the fluency scores have a reasonable degree of validity

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[1]Based on the senior researcher's considerable experience with speech ratings (Williams, Whitehead, and Miller, 1971) it is not difficult to assume that gross ratings of fluency, particularly on only a four-step scale, can be reasonably obtained. Although it is not formally described in the report, the fieldworkers were practiced in the use of the scale and ratings were compared between them as well as with other members of the research staff. In short, these ratings are assumed to be reliable. Their validity is subsequently discussed in this report.

Table 1

Average Fluency Ratings in Responses to Spanish and English Items as Compared by Teachers' Classification of the Students

	Children's Classification		
Fluency	Bilingual	English	Spanish
Spanish items	1.90a*	0.72c	2.00a
English items	2.08a	2.26a	1.45b

*Means with common subscripts are not significantly ($p<.05$) different from one another.

as paired with the teacher's classification of the children into the different groups. In subsequent analyses aimed at answering the question of the relationship of language dominance to the effects of CARRASCOLENDAS, both of these indexes of language dominance will be employed.[2]

Since the present question is one of relationship, the most applicable statistical model is one of correlation. This will index the degree to which the gain scores in either the Spanish or English items are related to measures of language dominance. At the same time, this approach will also allow us to inquire how these relations compare with other relevant factors, such as whether or not a child viewed the program or whether or not he had supplementary activities.

Table 2 presents a series of correlation coefficients which represents indexes of the relationship of the language dominance measures with gain scores (1-4 scale, on the Spanish and English test items.). The table also includes similar indexes of relationships of whether or not the child viewed a program and whether or not he engaged in supplementary activities.

Let us first consider items having a relationship with gains in the Spanish testing area. There is only one item which stands out as having anything more than a trivial relationship with gains in the Spanish testing area, and this is the variable of whether the child did or did not view the program. A correlation of .19 in this case would only be expected to occur by chance in 1 out of 10 cases of random sampling. We can have some confidence that it is not just a random occurrence although it is a very small correlation. At best the conclusion here is that the gains in the Spanish test area (which were small in the first place) are somewhat related in a correlational sense to whether or not the child viewed the program. At the same time, we can note that there is no relationship between gains in the Spanish test area and either of the language measures or the activity variable.

The most encompassing generalization here is that if gains in the Spanish area were to be predicted from anything, it would be upon the basis of viewing or not viewing the program. This generalization can be supported in a more definitive manner by use of a prediction equation which indexes the degree to which variables of viewing, activi-

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[2]Of course, it would be possible to employ more detailed language measures in future research, but such measures require time and expense, and should not begin to mask the main purpose of this research.

ties, and language dominance jointly predict gain scores in the Spanish testing area. When the equation was calculated, it indicated that the index of multiple correlation of all these variables upon gains in the Spanish area was +.2341. Roughly 86% of the prediction in this equation was due to the variable of whether or not the child watched the program. It is very clear, then, that gains here are independent of language dominance measures.

Results of similar analyses for the gains on the English test items can be interpreted using the same strategies. First, as can be noted in Table 2, there are several marked correlations of the various variables with gains in the English test items. There are interpretable correlations, for example, of whether or not the child viewed the program (.49) and whether or not he also engaged in supplementary activity (.63), both with gains in the English scoring area. Neither of these correlations has over a 1 in a 100 chance of occuring randomly. They are indexes of relationship in which we can have a substantial degree of confidence. At the same time, however, these are the only two variables which have any major observable relationship with gains in the English area.

It can be noted in passing that there is a small negative correlation in the teachers' rating of a child as <u>not</u> being English dominant and gains in the English items. Similarly there is a very small positive correlation between a child's average ratings in Spanish fluency and gains on the English test items. Both of these correlations are too small in magnitude to have anything more than a passing interest in. But they do suggest that children who may be less adept in English than others, may be among the ones who gain in the English items as a result of viewing CARRASCOLENDAS.

As in the analysis discussed earlier, it was further possible to see how the variables of language dominance, viewing, and activities, jointly predict gains in the English test items. An appropriate equation was calculated. It indicated that there was a multiple correlation of these variables with English test items of a magnitude of +.687. This is a correlation of substantial magnitude in this type of situation, and it indicated scores in the English test items are substantially predictable. One basis for prediction is whether a child viewed the program, and this contributed to about 28% of the predictability in the equation. The second is the effects of viewing combined with activities which contributes to about 68% of the prediction of gain scores. None of the measures of language dominance contributes significantly to this equation. This is strong evidence that the gains in the English language area, particularly as predicted by the two variables just discussed, are independent of language dominance.

The overall conclusion, then, of this series of analyses is that based upon the measures incorporated in this study, no salient evidence

Table 2

Relations of Viewing, Activities and Language Measures* with Gain Scores in Spanish and English Items

Variables	Gain Scores	
	Spanish	English
Group		
Viewing:	.19	.49
Activities:	.01	.63
Teacher classification		
Bilingual:	-.07	-.16
English dominant:	.01	.05
Spanish dominant:	.07	.14
Fluency		
English:	.03	.08
Spanish:	.04	.15

*Variables such as group and teacher classification are entered in a binary code (1=yes, 0=no).

can be found that effects of viewing CARRASCOLENDAS, either in the area of Spanish test items or English test items, are related to, or dependent upon, the child's language dominance. Of course, this does not preclude situations where such an effect could be the case. It only says that in a school involving children of various degrees of English as against Spanish dominance, as well as bilingual capabilities, effects of the program do not seem to interact in any important way with language dominance. Since this is considered to be an important as well as practical finding of the study, attenpts will be made in the larger field study conducted in 1972-1973 to include indexes of the children's language capabilities, and to assess the relationship of these with gains due to viewing CARRASCOLENDAS.

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